Remarks.—The mean of the sitting pulse on retiring—calculated from 159 individual observations, made on 12 different persons in health—is $73\frac{5}{17}$.

The mean of the sitting pulse on rising—calculated from 157 individual observations, made on 12 different persons in health—is $73\frac{9}{17}$.

The mean of the sitting respiration, per minute, on retiring—calculated from 158 individual observations, made on 12 different persons in health—is $16\frac{23}{17}$.

The mean of same pulse on rising—calculated from same number of observations—is $17\frac{3}{17}$.

The mean daily amount of fluids (mostly water) drank by the 12 experimenters, during 16 days, was 25.2 ounces.

The mean amount of urine voided daily by same parties was 28.73 ounces. The mean number of passages of urine daily was 4.57. The mean amount voided at each passage, 6.287 ounces. The mean specific gravity of the urine, 1.02756. The mean number of stools daily—calculated from over 100 individual observations—0.95. The mean weight of each stool—calculated from the entire series of observations—5.73 ounces.

The foregoing observations have been made with great care, and have been a work of labour. We trust they may fill a partial vacancy in physiological observations in this direction.

ART. XIX.—*Aneurism of the Brachial Artery, occurring after Amputation. Rupture of the Tumour, with Hemorrhage; Reamputation; Recovery.* By G. W. SMITH, M. D., of Plainfield, Pa.

JOHN FINLEY, private, Co. E, 3d Massachusetts Artillery. Admitted to White Hall Hospital, Aug. 24th, 1865. This man's right arm had been amputated, Aug. 19th, very close to the elbow-joint, in consequence of a severe injury of the right forearm, the result of the premature explosion of a shell fired from his own gun. The form of the operation was the anterior and posterior flap. On admission, the man's general health was *very* much better than could have been expected under existing circumstances; he ate well, slept well, and suffered but little pain; his bowels were regular, tongue clean, skin healthy, pulse 78 and of good volume. These happy indications are severally alluded to, because it is thought their existence is somewhat remarkable in conjunction with a stump five days after amputation, the condition of which is decidedly unhealthy, not only at the point of operation, where the flaps are pale, flabby, and by their appearance would seem to indicate a decided lack of constitutional vitality, but throughout its whole extent, being severely and deeply burned. The left arm, shoulder, and breast were also badly burned. The treatment consisted of nutritious food, and porter, with a local application of warm water; as a stimulant, an occasional touching of the wound with acid. nitric. ℥j to aq. ℥j was resorted to.

On the night of Aug. 27th secondary hemorrhage occurred, of an alarm-

ing character; the bleeding was finally arrested by pressure, after at least twenty-five ounces of blood had been lost. From this time until Aug. 31st the patient did comparatively well; on the morning of this day the hemorrhage recurred, and a board of medical officers was called to see the patient in consultation. At this time the burned arm was in a very unpromising condition, for though not actually sloughing, there was every indication that such an event would soon occur. It was also discovered that the circulation in the part, from some cause, was abnormal. After careful examination, an opinion was formed that an aneurism of the brachial artery existed. The unhealthy condition of the burned stump, it was thought, promised badly for the success of ligation, and it was decided to reamputate. The circular operation was performed near the shoulder-joint. Very little hemorrhage occurred. Anæsthetic used, chloroform one pint, ether four pints.

An examination of the removed part showed a well-formed aneurism of the brachial artery, existing about two and a half inches above the point of the application of the ligature. The two *inner* coats of the artery were *intact*, and *formed the walls of the aneurismal tumour*. The external coat was deficient, a small portion of its circumference having been shaved off by the knife of the operator in cutting the anterior flap at the first amputation. Through this opening, or ring, the aneurismal tumour protruded, reminding one of the protrusion of a femoral hernia through its ring. The edges of the *ring* were bold and well defined, and the tumour itself consisted of a well-marked neck and body; that portion of it within the circumference of the ring being constricted to the diameter of one-eighth of an inch, the protruded part, or body, measuring at least half an inch in diameter. It was discovered that the hemorrhage proceeded from a rupture in the walls of the aneurism.

The secondary amputation did very well, and the patient was transferred to his own State, Oct. 29th, with a stump entirely cicatrized.

In this case there are two points of interest presented to the surgeon. The first is, that the knife of the operator, in performing the flap operation, may so wound an artery as not to be perceptible at the time, and yet give rise to very serious secondary results. Again, it proves that the walls of an aneurism are not always formed by the *external* coat of an artery; neither are they always formed by the dilatation of all the coats, or by cellular tissue; but may be formed by the dilatation of the *internal* tunics, the outer one being, from some cause, injured. In the case above delineated, the external coat was certainly injured by the knife. At first it was thought that it might be the result of a direct injury to the vessel at the time of the explosion of the shell; but the healthy condition of all the coats, as well as the smooth *cut* edges of the wound in the fibrous tunic, precluded the latter supposition.